

# Arizona Department of Health Services

## OCDPNS Nutrition Standard

### Ages 1-5

#### Dietary Quality/Appropriate Nutrition:

##### Macronutrients (1, 2, 3)

- **Protein:**  
1-3 years – 1.10 g/kg/day or 13 g/day  
4-5 years - 0.95 g/kg/day
- **Carbohydrates:**  
130 g/ day RDA  
no more than 25% of total energy from added sugars
- **Total fat:**  
1-3 years – 30-40 g/day AMDR  
4-5 years - 25-35 g/d AMDR

Children older than 2 years old should gradually adopt a diet that by the age of 5 years reflects the following pattern of nutrient intake:

- total fat no more than 30% and no less than 20% of total energy over several days
- Less than 10% of total energy from saturated fat
- Less than 300 mg dietary cholesterol/day

- **Total Fiber:**  
Equivalent to child's age plus 5 grams (9-10g/d for 4-5 y/o) (4), up to 25g/day (1)

##### Persons > 2 years should follow Dietary Guidelines

###### *Aim for Fitness . . .*

- Aim for a healthy weight.
- Be physically active each day.

###### *Build a Healthy Base . . .*

- Let the Pyramid guide food choices.
- Choose a variety of grains daily, especially whole grains.
- Choose a variety of fruits and vegetables daily.
- Keep food safe to eat.

###### *Choose Sensibly . . .*

- Choose a diet low in saturated fat and cholesterol and moderate in total fat.
- Choose beverages and foods to moderate your intake of sugars.

- Choose and prepare foods with less salt.
- If you drink alcoholic beverages, do so in moderation.

### **Food Guide Pyramid Servings for Young Children and Sizes (3)**

Use the Food Guide Pyramid to guide choices:

**Note:** Offer 2 to 3 year olds less, about 2/3rds a serving. During the meal or snack time provide a serving (helping), which is child-sized in the amount. Then they can ask for more (8,9). As a rule of thumb to determine the serving amount for a toddler or preschooler, use **one tablespoon** for each year of the child's age. For example, a three-year-old child will receive three tablespoons of a vegetable. This works well when serving vegetables and rice.

Meat and Beans Group (meat, poultry, fish, dry beans, eggs, and nuts):

2 meat and beans servings

Serving Sizes –

2-3 ounces of cooked lean meat, poultry, or fish
1/2 cup of cooked dry beans or 1 egg counts as 1 ounce of lean meat
Two tablespoons of peanut butter* counts as 1 ounce of meat.

*\*Peanut butter is a choking hazard and is not recommended to give to children under 3 years of age.*

Grain Products Group (bread, cereal, rice, and pasta)

6-grain servings

Serving Sizes –

1 slice of bread
1 ounce of ready-to-eat cereal
1/2 cup of cooked cereal, rice, or pasta

Vegetables and Fruit Groups

- 2 fruit and 3 vegetable servings

Serving Sizes - Vegetables

1 cup of raw leafy vegetables
1/2 cup of other vegetables -- cooked or chopped raw
3/4 cup of vegetable juice

Serving Sizes - Fruits

1 medium apple, banana, orange
1/2 cup of chopped, cooked, or canned fruit

3/4 cup of fruit juice
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Fruit Juice should be limited to 4-6 oz/day (9)

Milk, Yogurt and Cheese Group:

- 2 servings

Serving Sizes:

1 cup of milk or yogurt
1-1/2 ounces of natural cheese
2 ounces of processed cheese

Some foods fit into more than one group. Dry beans, peas, and lentils can be counted as servings in either the meat and beans group or vegetable group. These "cross over" foods can be counted as servings from either one or the other group, but not both. Serving sizes indicated here are those used in the Food Guide Pyramid and based on both suggested and usually consumed portions necessary to achieve adequate nutrient intake. They differ from serving sizes on the Nutrition Facts Label, which reflect portions usually consumed.

## Iron

- DRI: (4)
- 1-3 years: 7 mg/d
- 4-5 years: 10 mg/d, 40 mg/day Upper Limit

### Iron Screening (10)

Health professionals are recommended to assess all young children for risk of iron deficiency anemia. Universal screening high risk factors include: low income, WIC eligible, migrant or recently arrived refugees; and Selective screening for those with known risk factors including: children with history of pre-term or with low birth-weight, fed non-iron fortified formula for more than 2 months, fed cow's milk prior to 12 months of age, breastfed and did not receive adequate iron from supplemental foods after 6 months of age, children who consume more than 24 ounces of cow's milk per day, and children with special health care needs.

At ages 2 to 5 years, annual screens are recommended for:

- Children who consume a diet low in iron
- Children with limited access to food because of poverty or neglect
- Children with special health care needs

## Fruit/Vegetable Intake

### Vitamin A

- DRI's (4)
- 1-3 years: 300 micrograms/d
- 4-5 years: 400 mcg/day; UL: 900 mcg/day

## **Vitamin C**

- DRI's (5)
- 1-3 years: 15 mg/d
- 4-5 years: 25 mg/day; UL: 650 mg/day

*Note: Vitamin C helps with the absorption of iron.*

Attempts should be made to serve high Vitamin C fruits and vegetables and high Vitamin A fruits and vegetables; practically, this means offering a variety of colored fruits and vegetables each day.

## **Calcium and Vitamin D**

### **Calcium: (6)**

- DRI's
- 1-3 years: 500 mg/d
- 4-5 years: 800 mg/d, 2500 mg/d upper limit

### **Vitamin D: (6)**

- DRI's
- 1-5 years: 5 micrograms/d, 50 mcg/day upper limit

It is recommended that an intake of 200 IU of vitamin D supplementation per day be continued throughout childhood and adolescence, because adequate sunlight exposure is not easily determined for a given person (11)

1% or fat-free milk is recommended for children after the age of 2.

Children who do not like the taste of milk can get calcium through flavored milk, cheese, and yogurt; lactose-intolerant children may tolerate smaller amounts of milk at a time, may also tolerate harder cheeses and yogurt. Calcium-fortified juices and other foods may also need to be chosen for the child that does not consume enough milk or dairy.

## **Folic Acid**

- DRI (7):
- 1-3 years: 150 micrograms/d, 300 micrograms/ d UL
- 4-5 years: 200 mcg/d, 400 mcg/d upper limit

Upper Limit (UL) applies to synthetic forms from supplements and fortified foods (1)

Sources of folic acid include ready-to-eat breakfast cereals, lentils, orange juice, spinach, black beans, asparagus, and fortified grains.

## **Healthy Weight**

Overweight in children and adolescents is generally caused by lack of physical activity, unhealthy eating patterns, or a combination of the two, with genetics and lifestyle both playing important roles in determining a child's weight. Our society has become very sedentary. Television, computer and video games contribute to children's inactive lifestyles (17). The American Academy of Pediatrics recommends the following in regards to television viewing for school-age children: (13)

1. Limit children's total media time (with entertainment media) to no more than 1 to 2 hours of quality programming per day.
2. Children under the age of 2 should not be allowed to watch television.
3. Remove television sets from children's bedrooms.
4. Monitor the shows children and adolescents are viewing. Most programs should be informational, educational, and nonviolent.
5. View television programs along with children, and discuss the content.
6. Use controversial programming as a stepping-off point to initiate discussions about family values, violence, sex and sexuality, and drugs.
7. Use the videocassette recorder wisely to show or record high-quality, educational programming for children.
8. Support efforts to establish comprehensive media-education programs in schools.
9. Encourage alternative entertainment for children, including reading, athletics, hobbies, and creative play

Never place a child on a diet to lose weight, unless supervised by a health professional. (12)

Parents and other family members have the most influence on children's eating behaviors and attitudes toward food. Parents need to make sure that healthy foods are available and decide when to serve them; however, children should decide how much to eat (12).

### **Screening (14,15,16)**

Body Mass Index (BMI) is recommended for screening children and adolescents. BMI is calculated from weight and height measures and can be plotted on a standard growth chart. BMI for children, also referred to as BMI-for-age, is gender and age specific. BMI-for-age is plotted on gender specific growth charts.

Growth Charts are available at <http://www.cdc.gov/growthcharts>

### Screening Guidelines for 1-2 year olds

Anthropometric Index	Percentile Cut Off Value	Nutritional Status Indicator
Weight-for-length/stature	< 5th Percentile > 95 <sup>th</sup> Percentile	Reflects body weight relative to length Classifies infants and young children as overweight and underweight.
Stature/length-for-age	< 5th Percentile	Describes linear growth relative to age Defines shortness or tallness. Short Stature
Weight for-age		Reflects body weight relative to age and is influenced by recent changes in health or nutritional status. Not used to classify infants, children and adolescents as under or overweight
Head Circumference for age	< 5th Percentile > 95th Percentile	Reflect brain size Developmental Problems

### Screening Guidelines for 2-5 year olds

- Underweight - BMI at or below < 5<sup>th</sup> percentile for age and sex
- At risk for Overweight - BMI > than or = to 85<sup>th</sup> percentile, but < 95<sup>th</sup> percentile for age and sex
- Overweight - BMI > than or = to 95<sup>th</sup> percentile for age and sex(3)
- Children (older than 2) and adolescents with an annual increase of 3 to 4 BMI units should be evaluated.

## **Physical Activity**

### **Physical Activity Guidelines for Toddlers and Preschoolers from the National Association for Sport & Physical Education (18):**

1. Toddlers should accumulate at least 30 minutes daily of structured physical activity; preschoolers at least 60 minutes.
2. Toddlers and preschoolers should engage in at least 60 minutes and up to several hours per day of daily, unstructured physical activity and should not be sedentary for more than 60 minutes at a time except when sleeping.
3. Toddlers should develop movement skills that are building blocks for more complex movement tasks; preschoolers should develop competence in movement skills that are building blocks for more complex movement tasks.
4. Toddlers and preschoolers should have indoor and outdoor areas that meet or exceed recommended safety standards for performing large muscle activities.  
Individuals responsible for the well-being of toddlers and preschoolers should be aware of the importance of physical activity and facilitate the child's movement skills.

### **Bright Futures Recommendations (12):**

- Kids need at least 60 minutes of moderate physical activity per day (tag, bike, walk, run, jump rope, etc)
- Adults should set an example for children: join kids in physical activity; encourage them to be active,
- Decrease TV and Computer time
- Organized sports, which require visual acuity, control, and balance, are inappropriate for children less than 6 years old because they need time to develop their motor skills.

## **Oral Health**

- DRI's for Fluoride: (6)
- 1-3 years: 1.3 mg/d
- 4-5 years: 1 mcg/day, 2.2 mcg/day Upper Limit

### **Recommendations (12,19,20):**

- Children should be weaned from the bottle between 12-14 months.
- Start cleaning as soon as the 1<sup>st</sup> tooth appears, using a damp cloth everyday.
- Children should see the dentist by their 1<sup>st</sup> birthday.
- Children should have a dental check-up at least twice a year.



## **Recommendations (12, 19, 10): *cont.***

- Fluoridated toothpaste should be introduced when a child is 2-3 years of age. Prior to that, parents should clean the child's teeth with water and a soft-bristled toothbrush.
- Community water fluoridation is a safe and effective way to significantly reduce the risk of early childhood caries in infants. If bottled water is used, it is recommended to have approximately 0.8 to 1.0 mg/L (ppm) of fluoride per day.
- To prevent dental caries: Drink fluoridated water, use fluoridated toothpaste (after child has learned to spit), brush & floss regularly, have dental sealants applied to pits/fissures of teeth & consume sugars in moderation

Concentration of optimal fluoride in water for maximal dental caries prevention is 0.7 ppm to 1.2 ppm.

## **Food Security**

Food insecurity is the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways. (19 USDA ERS 2002) Federal poverty guidelines are established by the Office of Management and Budget, and are updated annually by the Department of Health and Human Services.

***Arizona Farmers' Market Nutrition Program:*** The WIC Farmers' Market Nutrition Program (FMNP) is associated with the Special Supplemental Nutrition Program for Women, Infants and Children, popularly known as WIC, provides supplemental foods, health care referrals and nutrition education at no cost to low-income pregnant, breastfeeding and non-breastfeeding post-partum women, and to infants and children up to 5 years of age, who are found to be at nutritional risk. Women, infants (over 4 months old) and children that have been certified to receive WIC program benefits or who are on a waiting list for WIC certification are eligible to participate. For additional information, call (800) 362-0101.

***Child and Adult Care Food Program:*** Child and Adult Care Food Program provide nutritious meals and snacks to children and adults.

Free Meals	Incomes at or below 130 percent of the poverty level
Reduced meals	Incomes between 130 percent and 185 percent of the poverty level
Full price meals	Incomes over 185 percent of poverty level

**Commodity Supplemental Food Program:** The population served by CSFP is similar to that served by USDA's [Special Supplemental Nutrition Program for Women, Infants, and Children \(WIC\)](#), but CSFP also serves people who are 60 years or older, and provides food rather than the food vouchers that WIC participants receive. Eligible people cannot participate in both programs at the same time. CSFP food packages do not provide a complete diet, but rather are good sources of the nutrients typically lacking in the diets of the target population. For additional information, call the WIC hotline at (800) 362-0101.

**Food Banks, Food Pantries, and Emergency Feeding Centers:** Food Banks and Pantries can give an emergency supply of food. For additional information, call Community Information and Referral at (800) 352-3792.

**Food Stamp Program:** The Food Stamp Program provides low-income families with electronic benefits they can use like cash at most grocery stores to obtain a more healthy diet. Eligibility is based on the Food Stamp household's resources (such as bank accounts), income, and other requirements such as residence, citizenship or qualified non-citizen status and cooperation with the Department of Economic Security's Food Stamp Employment and Training Program. For more information call 1-800-352-8401 or visit [www.arizonaselfhelp.org/](http://www.arizonaselfhelp.org/)

**School Lunch and Breakfast Program:** The National School Lunch Program (NSLP) is a federally assisted meal program operating in public and nonprofit private schools and residential child care institutions. For additional information, please call Arizona Department of Education (602) 542-8700.

Free Meals	Incomes at or below 130 percent of the poverty level
Reduced meals	Incomes between 130 percent and 185 percent of the poverty level
Full price meals	Incomes over 185 percent of poverty level

After school snacks are provided to children on the same income eligibility basis as school meals. However, programs that operate in areas where at least 50 percent of students are eligible for free or reduced-price meals serve all snacks free.

**Senior Nutrition Programs:** This program is designed to provide older Americans with low cost nutritious meals through both Congregate Meals and Meals delivered at home. Also, several private organizations provide "Meals-on-Wheels" service. For additional information, please call Elder Resource and Referral at (602) 542-4446.

**Summer Food Program:** The Summer Food Service Program ensures that children in lower-income areas receive nutritious meals during long school vacations, when they do not have access to school lunch or breakfast. SFSP sponsors receive payments for serving healthy meals and snacks to children and teenagers, 18 years and younger, at approved sites in low-income areas. For additional information, please call Arizona Department of Education (602) 542-8700.

**WIC – Women, Infants and Children:** The Special Supplemental Nutrition Program for Women, Infants, and Children - better known as the WIC Program - serves low-income women, infants, & children up to age 5 who are at nutritional risk by providing nutritious foods to supplement diets, information on healthy eating, and referrals to health care. For additional information, call the WIC hotline at (800) 362-0101.

Income must be or at or below [185 percent of the Federal poverty income guidelines.](#)

**Head Start Program & Early Head Start:** The Head Start program has a long tradition of delivering comprehensive and high quality services designed to foster healthy development in low-income children. Head Start grantee and delegate agencies provide a range of individualized services in the areas of education and early childhood development; medical, dental, and mental health; nutrition; and parent involvement. In addition, the entire range of Head Start services are responsive and appropriate to each child and family's developmental, ethnic, cultural, and linguistic heritage and experience.

Income: Current Poverty Guidelines

## **Food Safety**

***Avoid potential choking foods such as (12):***

- Frankfurters
- Nuts and seeds
- Popcorn
- Raw carrots
- Chunks of meat
- Raisins
- Marshmallows
- Peanut butter (spoonful)
- Chips
- Whole grapes
- Pretzels
- Round or hard candy
- Raw celery
- Cherries with pits
- Large pieces of fruit

## **Fight Back!**

### ***Clean – Wash hands and surfaces often***

Always remember to wash hands, cutting boards, utensils, and cutting boards in hot soapy water before preparing food. Consider using paper towels to clean up kitchen surfaces. Or, if using cloth towels, consumers should wash them often in the hot cycle of the washing machine.

### ***Separate – Don't contaminate***

Separate and store raw meat, poultry and seafood from other foods on the bottom shelf of the refrigerator so juices don't drip onto other foods. If possible, use one cutting board for raw meat products and another for salads and other foods, which are ready to be eaten.

### ***Cook to proper temperature***

Cook meat, eggs, fish and poultry thoroughly. Make sure there are no cold spots in food (where bacteria can survive) when cooking in a microwave oven. For best results, cover food, stir and rotate for even cooking.

### ***Chill - Refrigerate properly***

Refrigerate or freeze perishables, prepared food and leftovers within two hours. Defrost (or marinate) food in the refrigerator, under cold running water or in the microwave.

### **Useful Resources:**

For other food safety information from

[www.FoodSafety.gov](http://www.FoodSafety.gov)

<http://www.fightbac.org/main.cfm>

<http://vm.cfsan.fda.gov>

[www.fsisusda.gov](http://www.fsisusda.gov)

1-888-SAFEFOOD for seafood, fruits and vegetable information from the US Food and Drug Administration

1-800-535-4555 for meat and poultry information from the United States Department of Agriculture.

## **Shopping/Food Resource Management**

Plan meals to save money, time and effort.

Make a grocery list of all the foods needed. Make meals easier to prepare by trying new ways to cook foods and use planned leftovers to save both time and money.

Encourage parents to involve their children in food shopping and preparation at this age (12).

## Cost Saving Tips

Look for specials in the newspaper ads for the stores and for coupons for foods on the grocery list.
Look for bargains on day-old bread and bakery products
Consider buying in bulk.
Buy fresh fruits in season.
Nonfat dry milk is the least expensive way to buy milk.
Use label and shelf information in the grocery store to compare fresh, frozen, and canned foods and convenience foods versus scratch foods to see which is less expensive.
Use dry beans and peas instead of meat, poultry, or fish.

## **Policy/Environmental Support**

### **Policy**

Position of the American Dietetic Association:

It is the position of the American Dietetic Association that all children and adolescents, regardless of age; gender; socioeconomic status; racial, ethnic, or linguistic diversity; or health status, should have access to food and nutrition programs that ensure the availability of a safe and adequate food supply that promotes optimal physical, cognitive, and social growth and development. Appropriate food and nutrition programs include food assistance and meal programs, nutrition education initiatives, and nutrition screening and assessment followed by appropriate nutrition intervention and anticipatory guidance to promote optimal nutrition status (21).

## References

1. Food and Nutrition Board (FNB), Institute of Medicine (IOM). Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids (Macronutrients) National Academy of Sciences; 2002
2. United States Department of Agriculture (USDA) and United States Department of Health and Human Services (HHS). *Dietary Guidelines for Americans, 5th ed.* 2000., Home and Garden Bulletin No. 232.
3. USDA. Food Guide Pyramid for Young Children. A Daily Guide for 2 to 6 years old. United States Department of Agriculture. Available from: <http://usda.gov/cnpp> (cited 1999 March 25).
4. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc.* Washington DC: National Academy Press; 2001. <http://www.nap.edu>
5. Institute of Medicine, Food and Nutrition Board. *Vitamin C, Vitamin E, Selenium, and Carotenoids* . Washington DC: National Academy Press; 2000. <http://www.nap.edu>
6. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride.* Washington DC: National Academy Press; 1997. <http://www.nap.edu>
7. Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B-6, Folate, Vitamin B-12, Pantothenic Acid, Biotin, and Choline.* Washington DC: National Academy Press; 1998. <http://nap.edu>
8. American Dietetic Association. Position of the American Dietetic Association: Dietary guidance for healthy children aged 2 to 11 years. *JADA*. 1999;99:93-101
9. American Academy of Pediatrics Policy Statement: Use and Misuse of Fruit Juice; *Pediatrics*; 107 (5); May 2001.
10. Centers for Disease Control and Prevention. Recommendations to prevent and control iron deficiency in the United States. *CDC; MMWR*. 1998;47:1-25.

11. American Academy of Pediatrics. Prevention of rickets and vitamin D deficiency: New guidelines for vitamin D intake. *AAP*. 2003;111:908-910.

## References-continued

12. Story, M; Holt, K; Sofka, D., eds. 2002. Bright Futures in Practice: Nutrition (2<sup>nd</sup> ed). Arlington, VA: National Center for Education in Maternal and Child Health.
13. American Academy of Pediatrics: Children, Adolescents, and Television. *Pediatrics*. 2001; 107(2):423-426
14. CDC: BMI: Body Mass Index, BMI for Children and Teens,  
<http://www.cdc.gov/nccdphp/dnpa/bmi/bmi-for-age.htm>
15. Hammer LD, Kraemer HC, Wilson DM, Ritter PL, Dornbusch SM. Standardized percentile curves of body-mass index for children and adolescents. *American Journal of Disease of Child*. 1991; 145:259–263.,
16. Pietrobelli A, Faith MS, Allison DB, Gallagher D, Chiumello G, Heymsfield, SB. Body mass index as a measure of adiposity among children and adolescents: A validation study. *Journal of Pediatrics*. 1998; 132:204–210.
17. Krebs NF, Baker Jr RD, Greer FR, Heyman MB, Jaksic T, Lifshitz F, Jacobson MS. Prevention of Pediatric Overweight and Obesity. *American Academy of Pediatrics*, Vol. 112, No. 2 August 2003, pp. 424-30.
18. NASPE Early Childhood Physical Activity Guidelines, NASPE Early Childhood Physical Activity Guidelines Task Force, February 6, 2002
19. American Academy of Pediatric Dentistry. Dental Care for Your Baby. 2003 Sept. 15. Available from: <http://www.aapd.org/publications/brochures/babycare.asp> (cited 2003 Dec. 30).
20. CDC: Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States. *MMWR*: 50(RR-14), 2001.
21. American Dietetic Association. Child and adolescent food and nutrition programs. *Journal of the American Dietetic Association*. 2003: 103:887-893.

